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**A HIGHLY OPTIMIZED NONLINEAR LEAST SQUARES METHOD FOR  
SINUSOIDAL SOUND MODELLING**

Abstract of the Disclosure

A method for modelling, i.e. analyzing and/or synthesizing, a windowed signal such as sound or speech signals, by computing the frequencies and complex amplitudes from the signal using a nonlinear least squares method is disclosed. The computations complexity is reduced by taking into account the bandlimited property of a window.